

Remarks/Arguments

In the non-final Office Action dated November 26, 2008, it is noted that claims 1-7 are pending; that claims 1-3 stand rejected under 35 U.S.C. §102; that claims 4-7 stand rejected under 35 U.S.C. §103; and that the drawing filed on July 29, 2008 has been accepted by the Examiner.

By this response, claim 3 has been amended to clarify an aspect of the optical retarder defined therein. No new matter has been added.

Cited Art

The references cited and applied against the claims in the present Office Action are listed as follows: U.S. Patent 6,862,058 to Ikeno et al. (hereinafter referenced as “*Ikeno*”); European Patent No. 1 109 053 to Tetsuo et al. (hereinafter referenced as “*Tetsuo*”); and U.S. Patent 6,570,634 to Kim (hereinafter referenced as “*Kim*”).

Rejection of Claims 1-3 under 35 U.S.C. §102

Claims 1-3 stand rejected under 35 U.S.C. §102 as being anticipated by Ikeno. Claim 7 has been amended as noted above. This rejection is respectfully traversed.

Claims 1 and 2 are independent base claims. Claims 3 depends directly from claim 1.

Ikeno appears to show a transfective liquid crystal device in which the gap in the reflective region is different from the gap in the transmissive region. *See Ikeno at Figure 10, for example, and the portions of the specification related to the elements shown therein.* Ikeno appears to employ a quarter-wave plate across both regions on the lower substrate, whereas he employs the quarter-wave plate in only the reflective region on the upper substrate. *Ibid.* In order to accommodate the differing optical path lengths in the reflective and transmissive regions, Ikeno shows that the liquid crystals in each region provide an appropriate amount of optical retardation when he states that the liquid crystal (LC) layer “includes a first group of liquid crystal molecules aligned in the reflective region to provide a first retardation and a second group of liquid crystal molecules aligned in the transmissive region to provide a second retardation. The second retardation is different from the first retardation.” *See Ikeno at col. 2, lines 44-49.*

Ikeno does not teach, show, or suggest the limitations in either of claims 1 or 2 with respect to the optical retarder. In claim 1, Applicants call for, “an optical retarder at the viewer

side of said liquid crystalline cell, a thickness of said optical retarder being such as to compensate a difference between the first cell gap and the second cell gap.” In claim 2, Applicants call for, “an optical retarder at the viewer side of said liquid crystalline cell, a thickness of said optical retarder being such as to compensate a difference between the first cell gap and the second cell gap, and wherein the optical retarder is a patterned retarder extending substantially only over the reflective portions of the liquid crystalline cell.” In Ikeno, the optical retarder is the liquid crystal and the liquid crystal’s overall orientation in a region. Ikeno’s optical retarder is not at the viewer side nor is it patterned as required in the claims. Moreover, optical retardation in Ikeno is a function of the orientation of the liquid crystals in a region. It is not a function of the thickness, as defined in the present claims.

The present Office Action identifies the quarter-wave plates 32 on the top and bottom substrates as performing the retarding functions. But this identification completely ignores the teachings and plain language of Ikeno quoted above. Optical retardation in Ikeno is performed clearly and expressly by the particularly oriented liquid crystals. The different orientations of the alignment for the liquid crystals in Ikeno are said to provide different refractive indices associated with those orientations. *See Ikeno at col. 5, lines 52-53.* Ikeno then appears to teach that “[u]sing different indexes of refraction provided by different modes of alignment of LC molecules, different values in retardation ($\Delta n \times d$) are provided in the reflective mode region and in the transmissive mode region. Thus, with the same thickness of the LC cell, sufficiently high brightness is provided in the reflective mode as well as in the transmissive mode.” *See Ikeno at col. 5, lines 58-64.* When Ikeno applies this relationship to the embodiment in Figure 10, he clearly states that the retardation of LC layer 13, that is, the entire liquid crystal layer 13, is determined as $\Delta n \times d$. *See Ikeno at col. 10, line 8.* Thus, one can only reasonably conclude that Ikeno clearly intends that optical retardation is to be provided by the liquid crystals themselves and not by the quarter-wave plates as suggested in the Office Action.

In light of these remarks, it is believed that Ikeno does not teach all the elements in independent claims 1 and 2. It is therefore believed that claims 1-3 are not anticipated Ikeno and would not have been obvious to a person of ordinary skill in the art upon a reading of Ikeno. Thus, it is submitted that claims 1-3 are allowable under both 35 U.S.C. §102 and 35 U.S.C. §103. Withdrawal of this rejection is respectfully requested.

Rejection of Claims 4-7 under 35 U.S.C. §103

Claims 4-6 stand rejected under 35 U.S.C. §103 as being unpatentable over Ikeno in view of Tetsuo, whereas claim 7 stands rejected under 35 U.S.C. §103 as being unpatentable over Ikeno in view of Kim. The rejections are respectfully traversed.

Claim 4 and 7 depend directly from claim 1 and include all the limitations of the base independent claim. Claims 5 and 6 depend directly from claim 4 and ultimately, therefore, from claim 1.

Tetsuo has been discussed in the prior response and has been distinguished from the claimed invention herein. Tetsuo has been added to Ikeno because it is said that Ikeno lacks disclosure of a color filter having different thickness for the transmissive and reflective regions of the cell. *See the present Office Action at page 4.*

Even if Tetsuo is taken, solely for the sake of argument, as disclosing the color filter having different regional thicknesses, Tetsuo does not teach, show, or suggest all the elements of the invention defined in claim 4 via the base independent claim, namely claim 1. For example, there is no teaching in Tetsuo of the optical retarder and the limitations pertaining thereto. Thus, Tetsuo fails to cure the deficiencies present in Ikeno at least with respect to the optical retarder as discussed above.

In light of the remarks presented directly above and also in view of the remarks presented with respect to claim 1 in the immediately preceding section, it is believed that claim 4 and the claims dependent thereon would not have been obvious to a person of ordinary skill in the art upon a reading of Ikeno and Tetsuo, either separately or in combination. Therefore, it is submitted that claims 4-6 are allowable under 35 U.S.C. §103. Withdrawal of this rejection is respectfully requested.

Kim has been added to Ikeno because it is said that Ikeno lacks a disclosure of the cell gap ratio present in claim 7. *See the present Office Action at page 5.* Even if Kim is taken, solely for the sake of argument, as disclosing the ratio of the first and second gaps, Kim does not teach, show, or suggest all the elements of the invention defined in claim 7 via the base independent claim, namely claim 1. There is no teaching in Kim of the optical retarder limitations discussed above with respect to claim 1. Thus, Kim fails to cure the deficiencies present in Ikeno at least with respect to the optical retarder.

In light of the remarks presented directly above and also in view of the remarks presented with respect to claim 1 in the preceding section, it is believed that claim 7 would not have been obvious to a person of ordinary skill in the art upon a reading of Ikeno and Kim, either separately

or in combination. Therefore, it is submitted that claim 7 is allowable under 35 U.S.C. §103. Withdrawal of this rejection is respectfully requested.

Conclusion

In view of the foregoing, it is respectfully submitted that all the claims pending in this patent application are in condition for allowance. Reconsideration and allowance of all the claims are respectfully solicited.

In the event there are any errors with respect to the fees for this response or any other papers related to this response, the Director is hereby given permission to charge any shortages and credit any overcharges of any fees required for this submission to Deposit Account No. 14-1270.

Respectfully submitted,

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